

**WHAT IS CLAIMED IS:**

1           1.       An apparatus for etching a glass substrate, comprising:  
2           an etching bath containing an etchant;  
3           a holder for supporting said glass substrate in the etching bath; and  
4           an ultrasonic oscillator generating ultrasonic vibration on a surface of said substrate.

1           2.       The apparatus for etching a glass substrate of Claim 1, wherein said etchant  
2           comprises hydrofluoric acid.

3           3.       The apparatus for etching a glass substrate of Claim 1, wherein said holder  
             comprises acid-resistant material.

1           4.       The apparatus for etching a glass substrate of Claim 3, wherein said acid-  
2           resistant material comprises polytetrafluoroethylene.

1           5.       The apparatus for etching a glass substrate of Claim 1, further comprising a  
2           thermometer for measuring the temperature of the etchant.

1           6.       The apparatus for etching a glass substrate of Claim 1, further comprising a  
2           thermostat for signaling a specific temperature rise of said etchant.

1           7.       The apparatus for etching a glass substrate of Claim 1, wherein said holder  
2 supports a plurality of glass substrates.

1           8.       The apparatus for etching a glass substrate of Claim 1, wherein said ultrasonic  
2 oscillator is located in an interior of said etching bath.

1           9.       The apparatus for etching a glass substrate of Claim 1, wherein said ultrasonic  
2 oscillator is located exterior to said etching bath.

1           10.      The apparatus for etching a glass substrate of Claim 1, wherein said holder is  
2 located in an interior of said etching bath.

1           11.      An apparatus for etching a glass substrate, comprising:  
2 an etching bath filled with an etchant;  
3 a holder for supporting said glass substrate in the etching bath;  
4 an ultrasonic oscillator generating ultrasonic vibration on a surface of said substrate;  
5 and  
6 a temperature sensor installed in said etching bath.

1           12.      The apparatus for etching a glass substrate of Claim 11, further comprising a  
2 control unit for receiving a temperature indicating signal from said temperature sensor and  
3 generating an etching termination signal when the temperature signal indicates an etching  
4 termination temperature.

1           13.     The apparatus for etching a glass substrate of Claim 12, wherein said control  
2     unit determines said etching termination temperature from said temperature indicating signal.

1           14.     The apparatus for etching a glass substrate of Claim 11, wherein said etchant  
2     comprises hydrofluoric acid.

3           15.     The apparatus for etching a glass substrate of Claim 11, wherein said holder  
4     comprises acid-resistant material.

1           16.     The apparatus for etching a glass substrate of Claim 15, wherein said acid-  
2     resistant material comprises polytetrafluoroethylene.

1           17.     The apparatus for etching a glass substrate of Claim 11, wherein said holder  
2     contains a plurality of glass substrates.

1           18.     The apparatus for etching a glass substrate of Claim 11, wherein said  
2     ultrasonic oscillator is located in an interior of said etching bath.

1           19.     The apparatus for etching a glass substrate of Claim 11, wherein said  
2     ultrasonic oscillator is located exterior to said etching bath.

1           20.     The apparatus for etching a glass substrate of Claim 11, wherein said holder is  
2     located in an interior of said etching bath.

1            21.     The apparatus for etching a glass substrate of Claim 11, further comprising an  
2     indicator for displaying the temperature monitored by said temperature sensor.